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ABSTRACT

Integrating metacognitive skills into classroom instruction can help students to develop into active, independent readers and learners. B. Armbruster, in a summary of research on metacognition, examined reading to learn from a metacognitive perspective as it related to four variables: texts, tasks, strategies, and learner characteristics. "Text" refers to the textual features of learning materials which influence comprehension and memory. Different tasks that readers are required to perform require different processes. A related index of metacognitive development with regard to the task is the reader's ability to accurately predict his or her performance on the task. An additional category of metacognitive knowledge and control involves knowing how to remedy comprehension failures. Study strategies are important in reading to learn and can be applied to enhance text processing. A final category of metacognition in reading to learn is the awareness of the learner of his or her own characteristics--such as background knowledge, degree of interest, skills, and deficiencies. It is worth noting that learner characteristics, like texts, tasks, and strategies, are age and experience dependent. Awareness of metacognitive skills can be gleaned through instruction. (Contains eight references.) (RS)

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Metacognition and Reading to Learn

by Norma Decker Collins

Researchers consistently posit that metacognition plays an important role in reading. Metacognition has been defined as "having knowledge (cognition) and having understanding, control over, and appropriate use of that knowledge" (Tei & Stewart, 1985). Thus, it involves both the conscious awareness and the conscious control of one's learning. In this digest, the implications of metacognition will be discussed as it relates to an important type of learning—reading to learn.

In a summary of research on metacognition Armbruster et al (1983) present reading to learn from a metacognitive perspective as it relates to four variables: texts, tasks, strategies, and learner characteristics.

The first variable, text, refers to the textual features of learning materials which influence comprehension and memory. Factors such as arrangement of ideas in texts, vocabulary, syntax, clarity of author's intentions, and reader's interest and familiarity with a text all have an effect on students' learning. Salient findings from the research include three basic points: (1) text structures influence learning even if the learner is unaware of their effect; (2) knowledge of the effect of text structures on learning is dependent on age and ability; and (3) a reader can optimize learning by becoming aware of text structures and the resultant effect they have on learning.

Knowledge of text structure is critical for reading to learn; it is requisite for efficient use of study time. By detecting the organizational patterns or structures of texts, students can observe how authors arrange ideas and determine which kinds of structures are used to interrelate ideas. In her research, Muth (1987) addresses text structures used most frequently in informational or expository materials found in content area textbooks. She presents strategies designed to help students read and comprehend informational texts. These include hierarchical summaries, conceptual maps, and thematic organizers designed to raise students' awareness of structures of text. (See also Harris, 1990; DiGisi, 1992.)

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Armbruster's (1983) research suggests that younger and less mature readers do not concentrate on textual features because they are not aware of the impact text structures have on learning. Researchers contend that knowledge of the effect of text structures on learning is prerequisite to conscious control of strategies. Teachers need to instruct students how to use text structure to enhance learning.

Another area of research in the development of metacognition of text features is related to the recognition of inadequacies in prose. (For a treatment of this problem, see our Digest "Content Area Textbooks: Friends or Foes.")

Ambiguous words or confusions within the text affect cognitive processing. Experienced readers will adjust their reading rate for anomalous texts and may return to an inconsistent sentence or passage several times, comparing what they know with what is written in the text. They are more aware of text inconsistencies and can judge whether or not their comprehension is altered because of such inconsistencies. Strategies suggested by Tei and Stewart (1985) will help students identify internal inconsistencies and deal with them appropriately.

Another variable of metacognition in reading to learn pertains to the task that the reader is required to perform. For example, locating a specific detail in a text requires a different process than that needed to write a critical analysis of the text. As with other facets of metacognition, mature and immature learners differ with respect to their knowledge of, and ability to control, task variables.

Fundamental to any task in reading is the derivation of meaning from the text. For learning to occur, students must be aware that the purpose of reading is to construct meaning. The reader must learn how to adapt reading behavior to specific tasks.

A related index of metacognitive development with regard to the task is the reader's ability to accurately predict his or her performance on the task. For young readers, this may be quite difficult, but with age and

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reading experience, readers begin to pick up cues which give them information about how well they have performed; these are important variables in metacognition of reading.

An additional category of metacognitive knowledge and control involves knowing how to remedy comprehension failures. It is not enough to be aware of one's understanding or failure to understand—a learner must be able to self-regulate his or her reading process in order to read for comprehension. The reader needs knowledge about metacognition strategies.

Researchers cite two different categories of strategies: "fix-up" strategies to resolve comprehension failures and studying strategies to enhance storage and retrieval when comprehension failure is not necessarily an issue (Armbruster, 1983). Tei & Stewart (1985) discuss several strategies for improving comprehension, including forming a mental image, rereading, adjusting the rate of reading, searching the text to identify unknown words, and predicting meaning that lies ahead.

Research indicates that readers use many strategies, but that a distinction exists between good readers and poor readers. Good readers tend to use the most effective strategy that leads to a thorough processing of the text. The research also supports that readers can be taught to develop self-awareness and control of learning.

Study strategies are important in reading to learn and can be applied to enhance text processing. Common studying strategies include underlining, outlining, notetaking, summarizing, and self-questioning. Many of these strategies are complex and best handled by older and more experienced readers. Various studies have reported improved performance by middle school, junior high, and high school students who were trained to use specific studying strategies (see for example, Gertz, 1994; Langer & Neal, 1987).

The decision a teacher makes about teaching metacognitive skills will be based on what serves the students best. Applying some of the strategies suggested by Schmitt and Hopkins (1993) may be appropriate when working with younger, inexperienced readers. The two researchers describe how to incorporate comprehension strategies into basal reading instruction to promote metacognition before, during, and after reading.

A final category of metacognition in reading to learn is the awareness of the learner of his or her own characteristics—such as background knowledge, degree of interest, skills, and deficiencies—and of how these affect learning. Again, the reader must be able to take that awareness and translate it into a change in reading behavior. Research suggests that successful students tend to relate information in texts to previous knowledge; less successful students showed little tendency to use their knowledge to clarify the text at hand.

Thus, learner characteristics, like texts, tasks, and strategies, are age and experience dependent. The development of metacognition appears to be linked to proficiency in learning. A related conclusion about metacognitive development is that knowledge precedes control. The researchers suggest that learners must first become aware of structures of text, as well as knowledge of the task and their own characteristics as learners, before they can strategically control the learning process to optimize the influence of these factors (Armbruster).

Awareness of metacognitive skills can be gleaned through instruction. Teachers help students learn from reading by encouraging students to take an active role in reading. The goal is to develop active, independent learners. Integrating metacognitive skills into classroom instruction can make that goal attainable.

References

Armbruster, Bonnie B., et al (1983). *The Role of Metacognition in Reading to Learn: A Developmental Perspective*. Reading Education Report No. 40. Urbana, IL: Center for the Study of Reading. [ED 228 617]

DiGisi, Lori Lyman, and Larry D. Yore (1992). "Reading Comprehension and Metacognition in Science: Status, Potential and Future Direction." Paper presented at the Annual Meeting of the National Association for Research in Science Teaching (Boston). [ED 356 132]

Gertz, Ellen A. (1994). "Enhancing Motivation and Reading Achievement: Intervention Strategies for the Underachieving Middle School Student." Ed.D. Practicum, Nova Southeastern University. [CS 011 760]

Harris, Jane (1990). "Text Annotation and Underlining as Metacognitive Strategies to Improve Comprehension and Retention of Expository Text." Paper presented at the Annual Meeting of the National Reading Conference (Miami). [ED 335 669]

Langer, Margaret Anne, and Judith Chibante Neal (1987). "Strategies for Learning: An Adjunct Study Skills Model." *Journal of Reading*, 31(2), 134-39. [EJ 359 218]

Muth, K. Denise (1987). "Structure Strategies for Comprehending Expository Text." *Reading Research and Instruction*, 27(1), 66-72. [EJ 364 719]

Schmitt, Maribeth Cassidy, and Carl J. Hopkins (1993). "Metacognitive Theory Applied: Strategic Reading Instruction in the Current Generation of Basal Readers." *Reading Research and Instruction*, 32(3), 13-24. [EJ 465 213]

Tei, Ebo, and Oran Stewart (1985). "Effective Studying from Text." *Forum for Reading*, 16(2), 46-55. [ED 262 378]

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